IN THE CLAIMS

1. (Currently Amended)   A method for transmitting data according to a flow table, a flow key, and one or more variables comprising:

    receiving a data transmission;

    extracting at least one field from a header of the data transmission;

    determining a most granular bit-value mask corresponding to the at least one field from a mask table having a plurality of bit-value masks;

    applying the determined bit-value mask to the at least one field;

    ~~masking~~ forming the flow key ~~according to the one or more variables~~ based on the application of the determined bit-value mask to the at least one field;

    indexing the flow table with reference to the masked flow key;

    looking up a flow entry in the indexed flow table; and

    transmitting data according to the flow entry.

2. (New)   The method according to claim 1, further comprising:

    extracting a plurality of fields from a header of the data transmission;

    determining a most granular bit-value mask corresponding to each of the plurality of fields from a plurality of mask tables, wherein each of the plurality of mask tables includes a plurality of bit-value masks;

    applying the determined bit-value mask to each of the plurality of fields; and

    forming the flow key based on the application of the determined bit-value masks to the plurality of field.

3. (New)   The method according to claim 1, further comprising:

if no bit-value mask in a mask table corresponds to the at least one extracted

field, no mask is applied to the at least one field.

4. (New)   The method according to claim 3, further comprising:

if no flow entry corresponds to the formed flow key, a default value is used for the

flow entry.

5. (New)   The method according to claim 1, wherein determining a most granular bit-

value mask includes performing a longest prefix match for the at least one field.

6. (New)   The method according to claim 1, wherein the at least one field includes at

least one selected from a group consisting of a source port, a destination port, a source

IP address, and a destination IP address.

7. (New)   The method according to claim 1, wherein the mask table includes at

least one selected from a group consisting of an address mask table and a port mask

table.

8. (New)   The method according to claim 1, further comprising:

entering a bit-value mask in the mask table by a service provider.

9. (New)   The method according to claim 1, wherein the bit-value mask

corresponds to a range of a plurality of subscribers to a service.

10. (New)   The method according to claim 9, wherein the plurality of subscribers

includes at least one selected from a group consisting of network hosts and a

subnetwork.

11. (New)   The method according to claim 1, wherein the bit-value mask corresponds

to at least one network application.

12. (New)   The method according to claim 1, wherein the flow entry includes

transmission information.

13. (New)   The method according to claim 12, wherein the transmission information

includes at least one selected from a group consisting of application specific qualities an

service specific qualities.

14. (New)   The method according to claim 13, wherein the transmission information

includes at least one selected from a group consisting of policy, quality of service, and

latency.

15. (New)   A system for transmitting data according to a flow table, a flow key, and

one or more variables, the system comprising:

a receiving unit configured to receive a data transmission;

an extraction unit configured to extract at least one field from a header of the data transmission;

a mask table including a plurality of bit-value masks;

a masking unit configured to determine a most granular bit-value mask corresponding to the at least one field from the mask table, apply the determined bit-value mask to the at least one field, and output a masked flow key;

a flow table indexed with reference to the masked flow key; and

a transmitter configured to transmit the data transmission according to a flow entry in the flow table corresponding to the masked flow key of the data transmission.

16. (New)   The system according to claim 15, further comprising:

a plurality of mask tables, each including a plurality of bit-value masks.

17. (New)   The system according to claim 15, wherein the masking unit is configured to determine a most granular bit-value mask by performing a longest prefix match for the at least one field.

18. (New)   The system according to claim 15, wherein the at least one field includes at least one selected from a group consisting of a source port, a destination port, a source IP address, and a destination IP address.

19. (New) The method according to claim 15, wherein the mask table includes at least one selected from a group consisting of an address mask table and a port mask table.

20. (New) The method according to claim 15, wherein the bit value mask is configured to allow at least one bit-value mask to be entered by a service provider.